

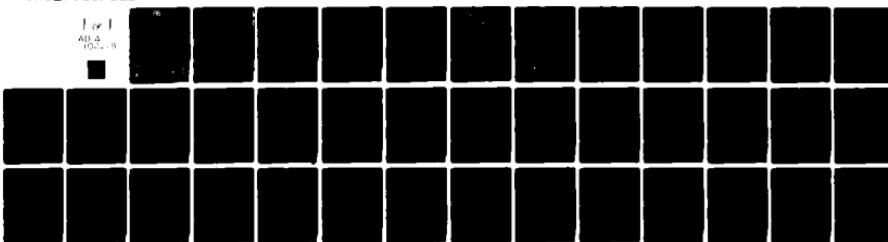
AD-A102 215

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/6 4/2  
19308A MLRS, MISSILE NUMBER BC001, V02-003, BC002, ROUND NUMBER--ETC(U)  
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METEOROLOGICAL DATA REPORT

19308A MLRS  
Missile No. BC001/V02-003/BC002  
Round No. V152/MD-19/V153/MD-20/V154/MD-21  
17 June 1981

by

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Phone No. (505)679-9568  
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ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) <i>Meteorological data gathered for the launching of the 19308A MLRS, Missile No. SC001, V02-003, and BC002, Round No. V152/MD-19, V153/MD-20, and V154/MD-21 presented in tabular form.</i>		

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## INTRODUCTION

19308A MLRS, Missile Numbers BC001, V02-003, and BC002, Round Numbers V152/MD-19, V153/MD-20, and V154/MD-21, were launched from BRILLO, White Sands Missile Range (WSMR), New Mexico, at 1019, 1019:05, and 1019:09 MDT, 17 June 1981. The scheduled launch times were 1000, 1000:04.5 and 1000:09 MDT.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations:

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}$ C), relative humidity, dew point ( $^{\circ}$ C), density (gm/m<sup>3</sup>), wind direction and speed, and cloud cover were made at the D-3 1/2 Met Site at T-0 minutes.

(2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

#### b. Upper Air:

(1) Low level wind data were obtained from Double Theodolite pibal observation at:

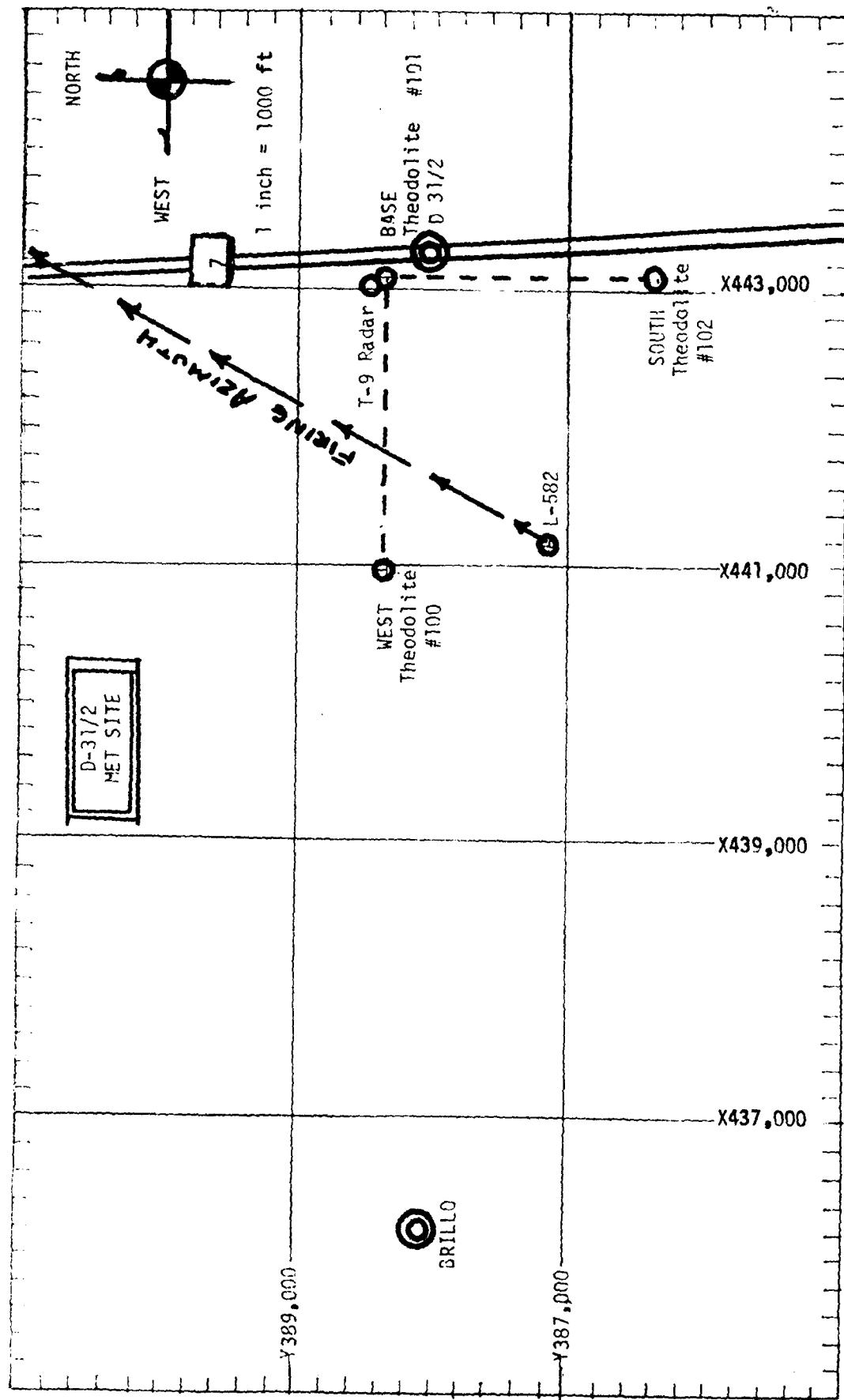
### SITE AND ALTITUDE

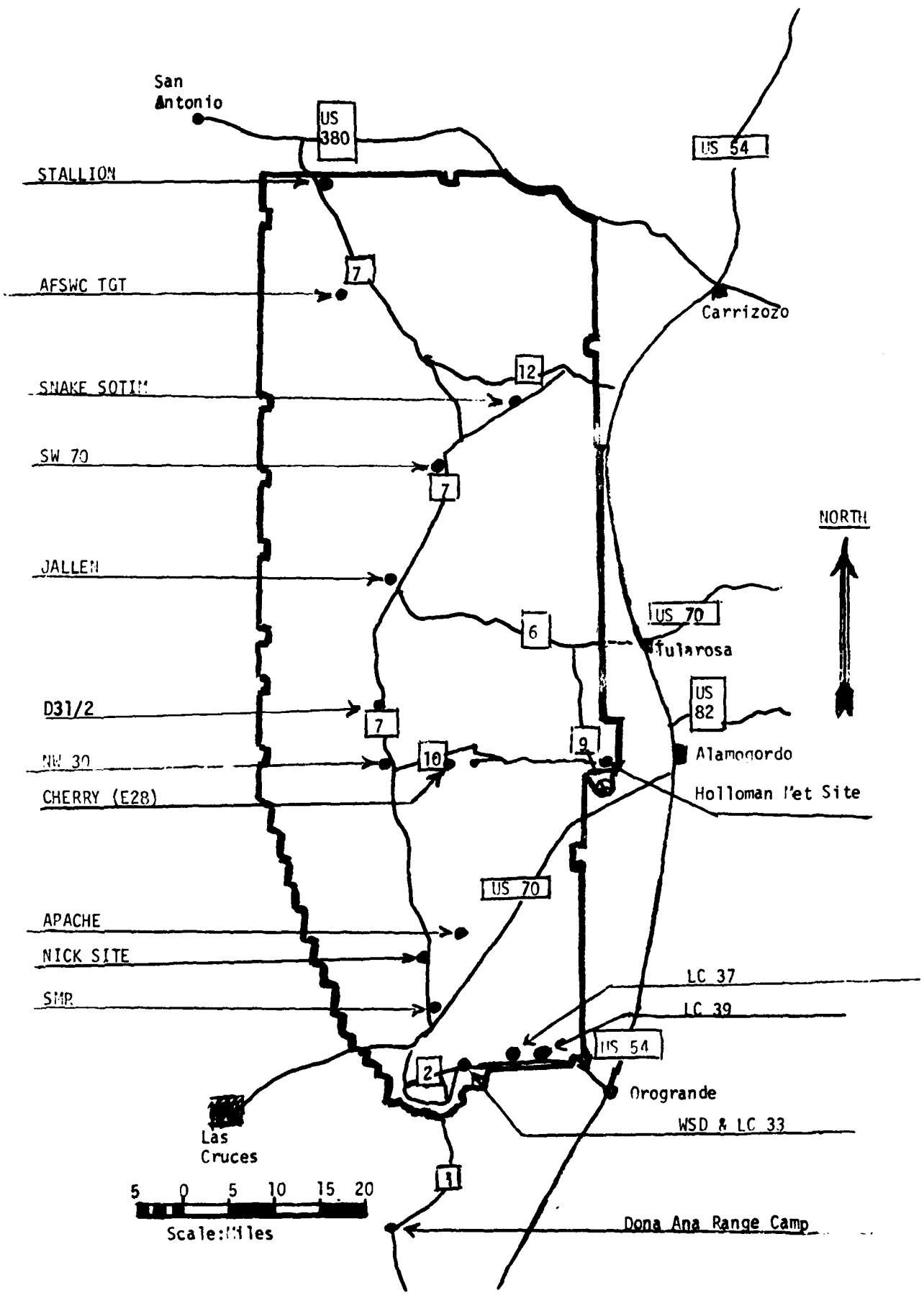
D-3 1/2      1750 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites:

### SITE AND TIME

HMS	0100 MDT
NW-30	0700 MDT
E-28	0800 MDT
E28	1000 MDT





## SURFACE OBSERVATION

PAGE 1

STATION D-3 1/2

DATE 17 JUNE 1981

X= 443,093.12 Y= 388,317.32 H= 3964.34

TIME H T M --	PRESSURE mbbs	TEMPERATURE OF °C	DEW POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm/m <sup>3</sup>	WIND DIRECTION deg. In	CHARACTER kts	VISIBIL- ITY
1000	893.8		24.7	3.0	24	1040	.090 .04	50

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER AMT TYPE HGT	2nd LAYER AMT TYPE HGT	3rd LAYER AMT TYPE HGT	4th LAYER AMT TYPE HGT	5th LAYER AMT TYPE HGT	6th LAYER AMT TYPE HGT	
NONE							

## PSYCHROMETRIC COMPUTATION

TIME: MDT	1000		
DRY BULB TEMP.	24.7		
WET BULB TEMP.	12.5		
WET BULB DEPR.	12.2		
DEW POINT	03.0		
RELATIVE HUMID.	24		

TABLE 2

## MLRS PILOT-BALLOON MEASURED AVERAGE LAYER WINDS

RELEASED FROM DOG 3 1/2 DATE 17 June 1981 TIME 1005 MST    MDT X

BASE THEODOLITE: X= 443,093.12 Y= 388,317.32 H= 3964.34

METHOD OF DATA COLLECTION: T-9 Radar                  S/T                  OTHER                  D/T

LAYER LIMITS (METERS)	LAYER MID- POINT (METERS)	DIRECTION DEGREES TN	SPEED KTS
	Surface		CALM
120-180	150	144	03
180-240	210	144	04
240-300	270	144	04
300-360	330	151	03
360-420	390	222	02
420-580	500	299	07
580-720	650	300	09
720-880	800	274	06
880-1020	950	260	06
1020-1280	1150	216	08
1280-1420	1350	204	09
1420-1680	1550	193	09
1680-1820	1750	144	06
1820-2180	2000	MISG	MISG

TABLE 3

## AIMING AND T-TIME COMPUTER MET MESSAGE

HMS	01000 MDT	NW-30	0700 MDT
METCM1329061		METCM1329065	
170700126881		171300122885	
00338008	29100881	00267003	29020885
01327016	29260871	01543002	28960875
02278024	29350846	02308007	28860849
03262015	29040807	03322007	28800810
04282005	28650761	04377006	28530763
05015004	28260716	05159002	28220719
06011011	28190674	06051014	28230677
07168006	28010635	07075007	28000637
08108011	27760597	08614002	27740599
09052011	27410561	09583007	27340563
10520007	27080527	10530008	27100529
11488007	26750495	11453007	26760496
12630009	26220449	12604007	26250451
13067009	25410394	13585004	25400395
14090010	24600344	14591006	24550345
15065007	23740299	15567006	23630299
16600007	22910258	16630004	22760258
17457024	22270222	17457015	22100222
18446035	21780190	18454034	21710190
19446035	21280162	19465033	21280162
20453029	20790138	20490030	20810138
21492016	20600117	21527021	20490117
22534014	20240099	22569011	20220099
23578010	20010084	23220003	20250084
24145007	20510071	24238007	20560071
25204012	20870060	25156006	21060060
26145015	21280051	26184016	21290051

TABLE 4

## AIMING AND T-TIME COMPUTER MET MESSAGES

E-28	0800 MDT	E-28	1000 MDT
METCM1329064		METCM1329064	
171400119895		171600119894	
00000000	28910895	00000000	29370894
01619005	28930884	01263003	29230883
02287010	28890858	02309007	29120858
03331009	28870819	03383004	29030819
04371007	28600772	04345006	28750772
05312005	28260727	05184004	28470727
06072012	28280684	06092010	28330685
07078009	28060644	07051010	28070645
08614005	27780606	08576006	27840606
09582008	27410570	09570008	27440570
10532010	27180535	10519007	27250536
11444008	26880502	11451012	26940503
12061008	26350456	12535007	26440457
13584004	25500400	13502004	25620401
14591905	24600349	14551006	24770350
15562006	23700303	15560007	23880305
16562004	22850262	16565006	23050264
17461017	22260225	17482016	22410227
18455033	21830193	18456034	21970195
19467035	21390165	19454036	21500166
20501030	20980141	20477029	21090142
21522017	20670120	21507017	20870121
22588009	20350101	22597010	20480102
23219005	20540086	23183C02	20380087
24245006	20730073	24303007	20700074
25191009	21150062	25179008	21100063
26175017	21490053	26189014	21540053

STATION ALTITUDE 4126.59 FEET MSL  
17 JUNE 81 0 100 HRS TD  
ASCENSION NO. 133

SIGNIFICANT LEVEL DATA  
1600010153  
HOLLOWMAN  
TABLE 5

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE DEGREES	DEWPOINT CENTIGRADE	REL.HUM. PERCENT
880.8	4126.6	17.0	.6	33.0
857.0	4898.3	20.7	3.0	31.0
850.0	5130.5	19.7	2.6	32.0
700.0	10499.2	7.2	-5.1	41.0
672.6	11573.7	8.8	-10.1	25.0
645.8	12683.1	6.9	-12.2	24.0
610.0	14210.3	5.3	-14.1	23.0
580.6	15536.7	2.2	-17.3	22.0
500.0	19449.6	-5.3	-20.9	28.0
454.2	21966.6	-10.4	-26.6	25.0
400.0	25075.8	-18.5	-35.2	26.0
366.6	27195.5	-23.5	-37.2	27.0
300.0	31905.2	-35.6	-47.5	28.0
289.8	32694.2	-37.7	-49.1	29.0
250.0	35990.4	-46.0		
239.0	36971.5	-48.3		
223.2	38449.2	-50.2		
200.0	40788.9	-54.3		
187.2	42182.3	-55.5		
150.0	46756.7	-63.1		
138.0	48436.6	-66.0		
123.0	50737.6	-66.3		
108.2	53285.7	-68.6		
100.0	54835.6	-70.7		
85.4	5799.8	-73.9		
77.8	59701.7	-72.5		
75.2	60367.6	-68.6		
70.0	61785.7	-68.4		
50.0	68595.6	-59.5		
39.6	73469.2	-55.0		
30.0	79363.1	-52.9		
24.4	83806.6	-49.5		
20.0	88119.7	-49.3		
17.2	91397.3	-48.8		
14.2	95604.0	-45.0		
10.0	103394.8	-43.5		
9.7	104074.4	-43.3		

STATION ALTITUDE 4126.59 FEET MSL  
17 JUNE 81 0100 HRS MDT  
ASCENSION NO. 133

UPPER AIR DATA  
1680010133  
HOLLOWAY  
TABLE 6

GEODETIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4126.6	880.8	17.0	.6	33.0	1054.6	664.5	190.0	8.0	1.000264
4500.0	869.2	18.8	1.8	32.0	1034.1	666.7	176.9	10.1	1.000261
5000.0	853.9	20.3	2.8	31.4	1010.5	668.4	166.6	13.5	1.000258
5500.0	838.7	18.8	2.1	32.6	997.4	666.8	160.5	17.1	1.000254
6000.0	823.7	17.7	1.4	33.5	983.6	665.4	156.2	18.1	1.000250
6500.0	808.9	16.5	.7	34.3	969.9	664.0	150.5	15.5	1.000245
7000.0	794.4	15.3	0	35.1	956.5	662.7	147.6	12.7	1.000241
7500.0	780.2	14.2	-.7	36.0	943.2	661.3	146.9	9.9	1.000237
8000.0	766.2	13.0	-1.4	36.8	930.2	659.9	148.5	7.1	1.000233
8500.0	752.5	11.9	-2.1	37.6	917.4	658.6	153.8	4.3	1.000229
9000.0	739.0	10.7	-2.9	38.5	904.7	657.2	149.4	1.9	1.000225
9500.0	725.8	9.5	-3.6	39.3	892.2	655.8	22.2	.6	1.000221
10000.0	712.8	8.4	-4.4	40.2	879.9	654.4	6.4	3.8	1.000217
10500.0	700.0	7.2	-5.2	41.0	867.8	653.0	5.5	7.1	1.000213
11000.0	687.2	7.9	-7.1	33.0	850.0	653.8	4.8	10.2	1.000207
11500.0	674.6	8.7	-9.7	26.1	832.5	654.6	5.3	11.6	1.000199
12000.0	662.3	8.1	-10.9	24.6	819.2	653.8	8.3	9.4	1.000195
12500.0	650.2	7.2	-11.9	24.2	806.7	652.8	20.5	7.1	1.000192
13000.0	638.2	6.6	-12.6	23.8	793.8	652.0	48.1	5.6	1.000188
13500.0	626.5	6.0	-13.2	23.5	780.7	651.4	40.9	7.9	1.000185
14000.0	615.0	5.5	-13.9	23.1	767.8	650.8	41.9	10.4	1.000181
14500.0	603.6	4.6	-14.8	22.8	756.0	649.7	42.8	11.6	1.000178
15000.0	592.4	3.5	-16.0	22.4	745.2	648.3	39.3	12.5	1.000175
15500.0	581.4	2.3	-17.2	22.0	734.6	646.9	37.4	10.5	1.000172
16000.0	570.4	1.3	-17.6	22.7	723.3	645.7	32.6	8.2	1.000169
16500.0	559.6	.4	-18.1	23.5	712.1	644.6	14.1	5.3	1.000166
17000.0	549.0	-.6	-18.5	24.2	701.1	643.5	333.7	4.0	1.000163
17500.0	538.7	-1.6	-19.0	25.0	690.3	642.3	297.8	5.3	1.000161
18000.0	528.5	-2.5	-19.4	25.8	679.6	641.2	284.5	7.2	1.000158
18500.0	518.5	-3.5	-19.9	26.5	669.2	640.0	279.9	8.9	1.000156
19000.0	508.7	-4.4	-20.4	27.3	658.9	638.9	277.3	8.2	1.000153
19500.0	499.0	-5.4	-21.0	27.9	648.7	637.7	274.3	6.7	1.000151
20000.0	489.4	-6.4	-22.2	27.3	638.7	630.5	278.0	3.7	1.000148
20500.0	479.9	-7.5	-23.3	26.7	628.8	635.2	313.5	1.1	1.000145
21000.0	470.6	-8.5	-24.5	26.1	619.1	634.0	345.0	3.8	1.000142
21500.0	461.5	-9.6	-25.6	25.5	609.5	632.7	349.6	6.6	1.000140
22000.0	452.5	-10.6	-26.8	25.0	600.2	631.4	349.3	9.7	1.000137
22500.0	443.5	-11.9	-27.8	25.2	591.1	629.8	350.2	12.0	1.000135
23000.0	434.7	-13.2	-28.8	25.3	582.3	628.3	355.6	11.5	1.000133
23500.0	426.1	-14.5	-29.9	25.5	573.6	626.7	2.2	10.8	1.000131

STATION ALTITUDE 42559 FEET  
17 JUNE 81 0100 HRS UTC  
ASCENSION NO. 133

REPORT AIR DATA  
168001010133  
HOLLOWAY

GEODETIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

TABLE 6 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES TN)	INDEX OF REFRACTION
24000.0	417.6	-15.8	-30.9	25.7	565.0	625.2	1.3.1
24500.0	409.3	-17.0	-32.0	25.8	556.6	623.6	25.0
25000.0	401.2	-18.3	-33.0	26.0	548.3	622.0	33.5
25500.0	393.1	-19.5	-34.0	26.2	539.7	620.6	41.1
26000.0	385.1	-20.7	-34.9	26.4	531.2	619.1	47.1
26500.0	377.2	-21.9	-35.9	26.7	522.8	617.7	51.8
27000.0	369.6	-23.0	-36.8	26.9	514.6	616.2	51.2
27500.0	361.9	-24.3	-37.8	27.1	506.4	614.7	50.6
28000.0	354.3	-25.6	-38.9	27.2	498.4	613.1	49.9
28500.0	346.8	-26.9	-40.0	27.3	490.4	611.5	50.4
29000.0	339.5	-28.1	-41.1	27.4	482.6	609.9	52.6
29500.0	332.3	-29.4	-42.2	27.5	474.9	608.3	50.7
30000.0	325.3	-30.7	-43.3	27.6	467.4	606.6	45.2
30500.0	318.5	-32.0	-44.4	27.7	460.0	605.0	42.7
31000.0	311.8	-33.3	-45.5	27.8	452.7	603.4	42.3
31500.0	305.2	-34.6	-46.6	27.9	445.6	601.8	41.1
32000.0	298.8	-35.9	-47.7	28.1	438.5	600.2	38.8
32500.0	292.3	-37.2	-48.7	28.8	431.5	598.5	35.2
33000.0	285.9	-38.5	-50.6	29.3*	424.3	596.8	28.3
33500.0	279.5	-39.7	-53.9	21.9**	417.1	595.2	19.4
34000.0	273.3	-41.0	-56.1	17.5**	410.1	593.6	4.3
34500.0	267.3	-42.2	-59.4	13.1**	403.2	592.0	35.1
35000.0	261.3	-43.5	-63.6	8.7**	396.5	590.4	341.8
35500.0	255.6	-44.8	-69.5	4.3**	389.8	588.7	332.8
36000.0	249.9	-46.0			383.3	587.1	321.8
36500.0	244.2	-47.2			376.5	585.6	299.5
37000.0	238.7	-48.3			369.9	584.1	270.8
37500.0	233.2	-49.0			362.4	583.3	257.7
38000.0	227.9	-49.6			355.2	582.5	254.7
38500.0	222.7	-50.3			348.1	581.6	253.9
39000.0	217.5	-51.2			341.3	580.4	255.8
39500.0	212.5	-52.0			334.7	579.3	256.9
40000.0	207.5	-52.9			362.4	583.3	257.7
40500.0	202.7	-53.8			328.3	578.1	256.2
41000.0	198.0	-54.5			322.0	577.0	255.3
41500.0	193.4	-54.9			315.4	576.1	252.9
42000.0	188.8	-55.3			308.7	575.5	250.6
42500.0	184.3	-56.0			302.0	575.0	249.0
43000.0	179.9	-56.9			295.8	574.0	247.3
43500.0	175.6	-57.7			289.8	572.9	248.8

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4126.59 FEET MSL  
 17 JUNE 81 0100 HRS MDT  
 ASCENSION NO. 133

UPPER AIR DATA  
 1680010133  
 HOLLOWAY

TABLE 6 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWEPOINT PERCENT	REL.HUM. GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
44000.0	171.4	-58.5	278.2	570.7	251.1	35.3	1.000062
44500.0	167.3	-59.4	272.6	569.6	251.7	35.6	1.000061
45000.0	163.3	-60.2	267.2	568.5	252.1	35.8	1.000060
45500.0	159.4	-61.0	261.8	567.4	251.7	35.3	1.000058
46000.0	155.6	-61.8	256.5	566.3	251.2	34.8	1.000057
46500.0	151.9	-62.7	251.4	565.2	251.1	34.1	1.000056
47000.0	148.2	-63.5	246.3	564.1	251.1	33.3	1.000055
47500.0	144.6	-64.4	241.2	562.9	251.6	32.2	1.000054
48000.0	141.0	-65.2	236.3	561.7	252.9	30.8	1.000053
48500.0	137.6	-66.0	231.3	560.7	254.6	29.2	1.000052
49000.0	134.2	-66.1	225.7	560.6	258.4	26.2	1.000050
49500.0	130.9	-66.1	220.2	560.5	263.1	23.4	1.000049
50000.0	127.6	-66.2	214.8	560.4	265.4	21.7	1.000048
50500.0	124.5	-66.3	209.6	560.3	266.0	20.4	1.000047
51000.0	121.4	-66.5	204.7	560.0	267.2	19.0	1.000046
51500.0	118.4	-67.0	200.0	559.4	270.5	17.2	1.000045
52000.0	115.4	-67.4	195.5	558.8	274.6	15.4	1.000044
52500.0	112.6	-67.9	191.0	558.1	281.4	14.3	1.000043
53000.0	109.8	-68.3	186.7	557.5	290.2	13.7	1.000042
53500.0	107.0	-68.9	182.5	556.8	29.5	13.5	1.000041
54000.0	104.3	-69.6	178.5	555.9	303.5	13.9	1.000040
54500.0	101.7	-70.2	174.6	554.9	300.0	14.4	1.000039
55000.0	99.2	-70.9	170.8	554.1	300.1	14.7	1.000038
55500.0	96.6	-71.4	166.9	553.4	302.1	14.6	1.000037
56000.0	94.2	-71.9	163.0	552.6	304.1	14.6	1.000036
56500.0	91.8	-72.4	159.3	551.9	307.5	14.3	1.000035
57000.0	89.5	-73.0	155.7	551.2	311.6	13.9	1.000035
57500.0	87.2	-73.5	152.1	550.5	316.4	13.1	1.000034
58000.0	85.0	-73.8	148.5	550.0	324.2	10.9	1.000033
58500.0	82.8	-73.4	144.4	550.6	335.7	9.0	1.000032
59000.0	80.7	-73.0	140.4	551.1	354.4	6.9	1.000031
59500.0	78.6	-72.7	136.6	551.6	26.4	5.7	1.000030
60000.0	76.6	-70.8	131.9	554.2	55.3	6.2	1.000029
60500.0	74.7	-68.6	127.2	557.2	64.9	5.6	1.000028
61000.0	72.8	-68.5	124.0	557.3	76.2	5.3	1.000028
61500.0	71.0	-68.4	120.9	557.4	83.8	5.6	1.000027
62000.0	69.3	-68.1	117.7	557.8	88.6	6.1	1.000026
62500.0	67.6	-67.5	114.4	558.7	92.7	6.7	1.000025
63000.0	65.9	-66.8	111.3	559.6	96.8	8.4	1.000025
63500.0	64.3	-66.2	108.2	560.5	99.5	10.1	1.000024

STATION ALTITUDE 4126.59 FEET MSL  
 17 JUNE 81 0 100 HRS MDT  
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UPPER AIR DATA  
 1680010133  
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 TABLE 6 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT PERCENT	REL.HUM. PERCENT	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
64000.0	62.7	-65.5		105.3	561.4	101.3	11.2	1.000023
64500.0	61.2	-64.9		102.4	562.3	102.8	11.1	1.000023
65000.0	59.7	-64.2		99.6	563.1	104.3	11.0	1.000022
65500.0	58.3	-63.5		96.8	564.0	101.7	10.8	1.000022
66000.0	56.8	-62.9		94.2	564.9	97.1	10.6	1.000021
66500.0	55.5	-62.2		91.6	565.8	92.4	10.5	1.000020
67000.0	54.1	-61.6		89.1	566.7	92.4	12.1	1.000020
67500.0	52.8	-60.9		86.6	567.5	92.5	13.7	1.000019
68000.0	51.5	-60.3		84.3	568.4	92.5	15.3	1.000019
68500.0	50.2	-59.6		82.0	569.3	92.5	16.9	1.000018
69000.0	49.0	-59.1		79.8	569.9	92.5	18.5	1.000018
69500.0	47.9	-58.7		77.8	570.6	92.9	18.6	1.000017
70000.0	46.8	-58.2		75.8	571.2	93.4	18.6	1.000017
70500.0	45.6	-57.7		73.8	571.8	94.8	19.1	1.000016
71000.0	44.6	-57.3		71.9	572.4	97.6	21.0	1.000016
71500.0	43.5	-56.8		70.1	573.0	99.9	22.9	1.000016
72000.0	42.5	-56.4		68.3	573.6	102.4	23.6	1.000015
72500.0	41.5	-55.9		66.5	574.2	104.9	23.8	1.000015
73000.0	40.5	-55.4		64.8	574.8	107.4	24.0	1.000014
73500.0	39.5	-55.0		63.1	575.4	106.8	22.6	1.000014
74000.0	38.6	-54.6		61.6	575.7	105.6	21.0	1.000014
74500.0	37.7	-54.6		60.1	575.9	104.3	19.5	1.000013
75000.0	36.8	-54.5		58.7	576.1	103.1	19.9	1.000013
75500.0	36.0	-54.3		57.3	576.4	101.9	20.3	1.000013
76000.0	35.1	-54.1		55.9	576.6	100.8	20.8	1.000012
76500.0	34.3	-53.9		54.6	576.8	100.2	21.3	1.000012
77000.0	33.5	-53.7		53.2	577.1	99.6	21.7	1.000012
77500.0	32.8	-53.6		52.0	577.3	99.4	22.2	1.000012
78000.0	32.0	-53.4		50.7	577.5	101.6	22.4	1.000011
78500.0	31.2	-53.2		49.5	577.8	103.8	22.7	1.000011
79000.0	30.5	-53.0		48.3	578.0	105.2	23.1	1.000011
79500.0	29.8	-52.8		47.1	578.3	103.0	23.4	1.000010
80000.0	29.1	-52.4		46.0	578.8	100.9	23.7	1.000010
80500.0	28.5	-52.0		44.8	579.3	98.5	24.0	1.000010
81000.0	27.8	-51.6		43.7	579.8	94.6	23.8	1.000010
81500.0	27.2	-51.3		42.6	580.3	90.6	23.8	1.000009
82000.0	26.5	-50.9		41.6	580.8	86.7	23.8	1.000009
82500.0	25.9	-50.5		40.6	581.3	86.0	24.1	1.000009
83000.0	25.3	-50.1		39.6	581.8	85.3	24.3	1.000009
83500.0	24.8	-49.7		38.6	582.3	84.7	24.5	1.000009

STATION ALTITUDE 4126.59 FEET MSL  
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UPPER AIR DATA  
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HOLLOWMAN  
TABLE 6 CON'T

GEODETTIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL.HUM. PERCENT	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TTN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
84000.0	24.2	-49.5		37.7	582.6	84.5	1.000008
84500.0	23.6	-49.5		36.8	582.7	84.3	1.000008
85000.0	23.1	-49.4		36.0	582.7	84.2	1.000008
85500.0	22.6	-49.4		35.1	582.7	83.9	1.000008
86000.0	22.1	-49.4		34.3	582.7	83.3	1.000008
86500.0	21.6	-49.4		33.5	582.8	82.7	1.000007
87000.0	21.1	-49.4		32.8	582.8	80.3	1.000007
87500.0	20.6	-49.3		32.0	582.8	74.9	1.000007
88000.0	20.1	-49.3		31.3	582.9	69.3	1.000007
88500.0	19.7	-49.2		30.6	582.9	64.9	1.000007
89000.0	19.2	-49.2		29.9	583.0	69.3	1.000007
89500.0	18.8	-49.1		29.2	583.1	73.1	1.000006
90000.0	18.3	-49.0		28.5	583.2	76.4	1.000006
90500.0	17.9	-48.9		27.9	583.3	77.9	1.000006
91000.0	17.5	-48.9		27.2	583.4	79.1	1.000006
91500.0	17.1	-48.7		26.6	583.6	80.2	1.000006
92000.0	16.7	-48.3		25.9	584.2	79.2	1.000006
92500.0	16.4	-47.8		25.3	584.8	77.3	1.000006
93000.0	16.0	-47.4		24.7	585.4	75.4	1.000005
93500.0	15.6	-46.9		24.1	586.0	73.7	1.000005
94000.0	15.3	-46.4		23.5	586.6	71.6	1.000005
94500.0	14.9	-46.0		22.9	587.2	76.6	1.000005
95000.0	14.6	-45.5		22.3	587.7	77.6	1.000005
95500.0	14.3	-45.1		21.8	588.3	78.6	1.000005
96000.0	13.9	-44.9		21.3	588.5	79.6	1.000005
96500.0	13.6	-44.8		20.8	588.7	80.7	1.000005
97000.0	13.3	-44.7		20.3	588.8	81.9	1.000005
97500.0	13.0	-44.6		19.9	588.9	83.8	1.000004
98000.0	12.7	-44.5		19.4	589.0	85.9	1.000004
98500.0	12.5	-44.4		19.0	589.2	88.0	1.000004
99000.0	12.2	-44.3		18.6	589.3	90.1	1.000004
99500.0	11.9	-44.2		18.1	589.4	88.9	1.000004
100000.0	11.7	-44.2		17.7	589.5	87.7	1.000004
100500.0	11.4	-44.1		17.3	589.7	86.6	1.000004
101000.0	11.1	-44.0		16.9	589.8	85.5	1.000004
101500.0	10.9	-43.9		16.5	589.9	84.0	1.000004
102000.0	10.6	-43.8		16.2	590.0	82.5	1.000004
102500.0	10.4	-43.7		15.8	590.2	81.0	1.000004
103000.0	10.2	-43.6		15.4	590.3	79.5	1.000003
103500.0	10.0	-43.5		15.1	590.4	78.0	1.000003

STATION ALTITUDE 4126.59 FEET MSL  
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UPPER AIR DATA  
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TABLE 6 CON'T

GEOGRAPHIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	SPEED OF SOUND METER KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
104000.0	9.7	-43.3		14.8	590.6	1.000003

STATION ALTITUDE 4126.59 FEET MSL  
 17 JUNE 81 0100 HRS MDT  
 ASCENSION NO. 133

MANDATORY LEVELS  
 1680010133  
 HOLLOWMAN  
 TABLE 7

GEOGRAPHIC COORDINATES  
 32.88865 LAT DEG  
 106.09965 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE DEGREES	AIR DEWPNT CENTIGRADE	REL.HUM. PERCENT	WIND DATA	
					DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5127.	19.7	2.6	32.	164.8	14.4
800.0	6827.	15.8	.3	35.	147.8	13.7
750.0	8611.	11.6	-2.2	38.	155.5	3.7
700.0	10489.	7.2	-5.1	41.	5.5	7.1
650.0	12495.	7.2	-11.9	24.	20.6	7.1
600.0	14644.	4.3	-15.2	23.	41.5	12.2
550.0	16945.	-.5	-18.5	24.	337.4	4.0
500.0	19423.	-5.3	-20.9	28.	274.8	6.9
450.0	22108.	-11.0	-27.1	25.	349.2	10.5
400.0	25034.	-18.5	-33.2	26.	34.5	9.2
350.0	28253.	-26.3	-39.5	27.	49.6	10.4
300.0	31842.	-35.6	-47.5	28.	39.4	7.1
250.0	35912.	-46.0			322.3	7.9
200.0	40691.	-54.3			254.0	35.0
175.0	43480.	-57.8			250.5	35.1
150.0	46631.	-63.1			251.1	33.7
125.0	50271.	-66.3			265.9	20.7
100.0	54667.	-70.7			299.7	14.6
80.0	58967.	-72.9			1.	6.4
70.0	61575.	-68.4			86..	5.8
60.0	64638.	-64.3			103.8	11.0
50.0	68339.	-59.5			92.5	17.1
40.0	72967.	-55.2			107.3	23.5
30.0	79026.	-52.9			103.8	23.3
25.0	82911.	-49.9			85.0	24.4
20.0	87709.	-49.3			68.4	18.9
15.0	93925.	-46.1			76.3	32.4
10.0	102837.	-43.5				

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4010.40 FEET SL  
 17 JUNE 81 07 00 HRS MDT  
 ASCENSION NO. 48

SIGNIFICANT LEVEL DATA  
 1680220048  
 NW 30

GEOGRAPHIC COORDINATES  
 32.88497 LAT DEG  
 106.49714 LON DEG

TABLE 8

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL.HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
884.9	4010.4	16.2	4.6	46.0
874.6	4337.0	15.5	3.0	43.0
850.0	5130.3	14.5	2.1	43.0
796.8	6921.7	13.7	.4	40.0
728.0	9398.4	8.5	-2.7	45.0
718.4	9758.6	7.7	-3.2	46.0
700.0	10462.4	6.3	-4.2	41.0
680.2	11242.5	9.0	-4.2	39.0
625.2	13523.5	5.6	-9.4	33.0
616.0	13922.1	5.6	-9.4	33.0
546.2	17110.7	-2.0	-16.1	33.0
520.8	18354.3	-2.6	-16.6	33.0
500.0	19411.7	-5.6	-19.3	33.0
456.2	21758.1	-9.8	-23.0	33.0
400.0	25039.9	-18.7	-30.3	35.0
346.2	28524.0	-27.3	-38.0	35.0
300.0	31855.8	-36.6	-46.7	34.0
282.2	33239.3	-40.7	-50.4	34.0
250.0	35919.2	-47.0		
220.0	38671.6	-53.0		
202.8	39680.1	-53.0		
200.0	40692.7	-54.7		
158.0	45594.5	-60.8		
150.0	46655.2	-62.7		
133.8	48960.1	-66.0		
119.2	51262.3	-67.8		
108.8	53064.9	-69.8		
100.0	54719.9	-70.4		
92.8	56176.7	-72.5		
70.0	61713.4	-67.6		
63.0	63832.1	-62.9		
50.4	68402.7	-60.0		
39.8	73343.1	-54.0		
30.0	79379.6	-51.3		
27.4	81320.2	-53.1		
20.8	87251.4	-49.1		

STATION ALTITUDE 4010.40 FEET MSL  
 17 JUNE 81 0730 HRS MDT  
 ASCENSION NO. 48

UPPER AIR DATA  
 1680220048  
 NW 30  
 TABLE 9

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
4010.4	884.9	16.2	4.6	1061.5	663.9	150.0	1.000275
4500.0	869.5	15.3	2.8	1046.7	662.7	163.6	1.000267
5000.0	854.0	14.7	2.2	1030.4	662.0	170.5	1.000262
5500.0	836.7	14.3	1.7	1013.2	661.6	174.5	1.000258
6000.0	823.7	14.1	1.3	995.9	661.3	178.2	1.000253
6500.0	809.0	13.9	.8	978.9	661.0	185.0	1.000248
7000.0	794.5	13.5	.3	962.6	660.6	193.5	1.000243
7500.0	780.2	12.5	-.3	948.8	659.4	202.7	1.000239
8000.0	766.1	11.4	-.9	942.2	658.1	206.3	1.000235
8500.0	752.2	10.4	-1.6	943.2	656.9	198.0	1.000231
9000.0	738.7	9.3	-2.2	944.2	655.6	184.3	1.000227
9500.0	725.3	8.3	-2.9	945.3	654.6	126.5	1.000223
10000.0	712.0	7.9	-3.5	944.3	680.3	653.9	1.000219
10500.0	699.0	8.3	-4.2	940.9	683.0	654.4	1.000214
11000.0	686.3	8.8	-4.2	939.6	684.9	654.9	1.000210
11500.0	673.8	8.6	-4.8	938.3	681.0	654.7	1.000206
12000.0	661.4	7.9	-5.9	937.9	681.8	653.8	1.000201
12500.0	649.3	7.1	-7.0	935.7	680.4	652.9	1.000197
13000.0	637.4	6.4	-8.2	934.4	792.8	652.0	1.000193
13500.0	625.7	5.6	-9.3	933.1	780.5	651.1	1.000189
14000.0	614.2	5.4	-9.5	933.0	766.7	650.8	1.000185
14500.0	602.7	4.2	-10.6	933.0	755.7	649.4	1.000182
15000.0	591.5	3.0	-11.6	933.0	744.9	647.9	1.000178
15500.0	580.4	1.8	-12.7	933.0	734.2	646.5	1.000175
16000.0	569.6	.6	-13.7	933.0	723.7	645.1	1.000172
16500.0	558.9	-.5	-14.8	933.0	713.3	643.6	1.000169
17000.0	548.5	-1.7	-15.8	933.0	703.1	642.2	1.000166
17500.0	538.1	-2.2	-16.2	933.0	691.0	641.7	1.000163
18000.0	527.9	-2.4	-16.5	933.0	678.5	641.4	1.000160
18500.0	517.9	-3.0	-17.0	933.0	667.1	640.7	1.000157
19000.0	508.0	-4.4	-18.2	933.0	657.9	639.0	1.000154
19500.0	498.3	-5.8	-19.4	933.0	648.5	637.4	1.000151
20000.0	488.6	-6.7	-20.2	933.0	638.1	636.3	1.000149
20500.0	479.2	-7.5	-21.0	933.0	627.9	635.2	1.000146
21000.0	469.9	-8.4	-21.8	933.0	617.9	634.1	1.000143
21500.0	460.8	-9.3	-22.6	933.0	608.0	633.0	1.000141
22000.0	451.8	-10.5	-23.5	933.1	598.7	631.7	1.000138
22500.0	442.8	-11.8	-24.6	933.5	589.9	630.0	1.000136
23000.0	434.1	-13.2	-25.7	933.8	581.2	628.4	1.000134
23500.0	425.5	-14.5	-26.8	934.1	572.7	626.7	1.000131

TATION ALTITUDE 1010.40 FEET 'SL  
17 JUNE 81 0700 HRS MDT  
ASCENSION NO. 48

UPPER AIR DATA  
1680220048  
NW 30

TABLE 9 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	INDEX OF REFRACTION
24000.0	417.0	-15.9	-28.0	34.4	564.4	625.0	347.5
24500.0	408.7	-17.2	-29.1	34.7	556.1	623.4	339.0
25000.0	400.6	-18.6	-30.2	35.0	548.0	621.7	331.8
25500.0	392.4	-19.8	-31.3	35.0	539.5	620.2	328.5
26000.0	384.4	-21.1	-32.4	35.0	531.0	618.7	326.6
26500.0	376.5	-22.3	-33.5	35.0	522.7	617.1	325.3
27000.0	368.8	-23.5	-34.6	35.0	514.5	615.6	324.8
27500.0	361.2	-24.8	-35.7	35.0	506.5	614.1	324.8
28000.0	353.8	-26.0	-36.9	35.0	498.6	612.5	325.7
28500.0	346.5	-27.2	-38.0	35.0	490.8	611.0	326.4
29000.0	339.2	-28.6	-39.3	34.9	483.1	609.3	326.3
29500.0	332.0	-30.0	-40.6	34.7	475.6	607.5	326.2
30000.0	324.9	-31.4	-41.9	34.6	468.2	605.8	326.1
30500.0	318.0	-32.8	-43.2	34.4	460.9	604.0	326.0
31000.0	311.2	-34.2	-44.4	34.3	453.7	602.2	326.1
31500.0	304.6	-35.6	-45.7	34.1	446.7	600.5	326.0
32000.0	298.1	-37.0	-47.1	34.0	439.7	598.7	325.8
32500.0	291.6	-38.5	-48.4	34.0	432.9	596.8	325.6
33000.0	285.2	-40.0	-49.7	34.0	426.1	594.9	326.6
33500.0	278.9	-41.3	-51.8	30.7**	419.0	593.2	327.8
34000.0	272.7	-42.5	-54.7	24.3**	411.8	591.7	332.5
34500.0	266.6	-43.7	-58.2	18.0**	404.6	590.2	343.3
35000.0	260.6	-44.8	-62.5	11.7**	397.6	588.7	356.7
35500.0	254.8	-46.0	-69.1	5.3**	390.8	587.1	1.0.6
36000.0	249.1	-47.2			384.0	585.6	4.2
36500.0	243.3	-48.3			377.0	584.2	337.0
37000.0	237.8	-49.4			370.1	582.8	294.7
37500.0	232.3	-50.4			363.4	581.4	272.0
38000.0	227.0	-51.5			356.8	580.0	363.9
38500.0	221.8	-52.6			350.3	578.5	258.4
39000.0	216.6	-53.0			342.8	576.0	255.7
39500.0	211.6	-53.0			334.8	578.0	254.2
40000.0	206.7	-53.5			327.8	577.3	253.1
40500.0	201.8	-54.4			321.4	576.2	252.9
41000.0	197.1	-55.1			314.8	575.3	253.0
41500.0	192.4	-55.7			308.2	574.5	254.1
42000.0	187.8	-56.3			301.8	573.7	255.3
42500.0	183.4	-56.9			295.4	572.8	255.7
43000.0	179.0	-57.6			289.2	572.0	255.7
43500.0	174.7	-58.2			283.2	571.2	256.4

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4010.40 FEET MSL  
 17 JUNE 81 0700 HRS MDT  
 ASCENSION NO. 48

UPPER AIR DATA  
 1680220048  
 NW 30  
 TABLE 9 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	DEWPOINT PERCENT	REL.HUM. GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
44000.0	170.6	-58.6		277.3	570.3	258.0	34.2	1.000062
44500.0	166.5	-59.4		271.5	569.5	260.1	33.9	1.000060
45000.0	162.6	-60.1		265.8	568.7	263.1	34.1	1.000059
45500.0	158.7	-60.7		260.2	567.9	266.0	34.4	1.000058
46000.0	154.9	-61.5		255.0	566.7	266.4	34.1	1.000057
46500.0	151.1	-62.4		249.9	565.5	266.6	33.8	1.000056
47000.0	147.5	-63.2		244.7	564.5	268.1	32.7	1.000054
47500.0	143.8	-63.9		239.5	563.5	270.4	31.1	1.000053
48000.0	140.3	-64.6		234.4	562.6	273.4	29.8	1.000052
48500.0	136.9	-65.3		229.5	561.6	277.7	29.0	1.000051
49000.0	133.5	-66.0		224.6	560.7	282.2	28.3	1.000050
49500.0	130.2	-66.4		219.4	560.1	285.6	27.7	1.000049
50000.0	127.0	-66.8		214.4	559.6	289.0	27.2	1.000048
50500.0	123.8	-67.2		209.5	559.1	291.8	25.7	1.000047
51000.0	120.8	-67.6		204.7	558.5	293.9	23.1	1.000046
51500.0	117.8	-68.1		200.1	557.9	296.6	20.4	1.000045
52000.0	114.8	-68.6		195.6	557.2	298.4	18.0	1.000044
52500.0	112.0	-69.2		191.2	556.4	301.7	15.6	1.000043
53000.0	109.2	-69.7		186.9	555.6	301.9	13.7	1.000042
53500.0	106.4	-70.0		182.4	555.3	307.9	12.4	1.000041
54000.0	103.7	-70.1		178.0	555.1	312.9	11.2	1.000040
54500.0	101.1	-70.3		173.7	554.8	317.9	10.7	1.000039
55000.0	98.6	-70.8		169.7	554.2	323.3	10.2	1.000038
55500.0	96.1	-71.5		166.0	553.2	328.9	9.3	1.000037
56000.0	93.6	-72.2		162.4	552.2	336.5	7.4	1.000036
56500.0	91.3	-72.2		158.3	552.2	348.7	5.7	1.000035
57000.0	89.0	-71.8		153.9	552.8	3.8	3.3	1.000034
57500.0	86.8	-71.3		149.7	553.5	68.2	1.5	1.000033
58000.0	84.6	-70.9		145.7	554.1	130.5	3.3	1.000032
58500.0	82.4	-70.4		141.7	554.7	137.2	4.4	1.000032
59000.0	80.4	-70.0		137.8	555.3	141.2	5.6	1.000031
59500.0	78.4	-69.6		134.1	555.9	142.3	6.4	1.000030
60000.0	76.4	-69.1		130.4	556.5	139.9	6.3	1.000029
60500.0	74.5	-68.7		126.9	557.1	137.5	6.3	1.000028
61000.0	72.6	-68.2		123.4	557.7	135.4	6.3	1.000027
61500.0	70.8	-67.8		120.0	558.3	133.6	6.5	1.000027
62000.0	69.0	-67.0		116.6	559.4	131.8	6.6	1.000026
62500.0	67.3	-65.9		113.1	560.9	135.1	6.5	1.000025
63000.0	65.7	-64.7		109.8	562.4	139.4	6.4	1.000024
63500.0	64.0	-63.5		106.5	563.9	142.5	6.3	1.000024

STATION ALTITUDE 4010.40 FEET MSL  
 17 JUNE 81 0700 HRS MDL  
 ASCENSION NO. 48

UPPER AIR DATA  
 1680220048  
 NW 30  
 TABLE 9 CON'T

GEOGRAPHIC COORDINATES  
 32.88497 LAT DEG  
 106.49714 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWEPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
64000.0	62.5	-62.8		103.5	565.0	139.9	5.9	1.000023
64500.0	61.0	-62.5		100.8	565.5	137.1	5.6	1.000022
65000.0	59.5	-62.2		98.3	565.9	122.2	6.6	1.000022
65500.0	58.1	-61.8		95.7	566.3	107.9	9.2	1.000021
66000.0	56.7	-61.5		93.3	566.7	100.2	12.1	1.000021
66500.0	55.3	-61.2		90.9	567.2	96.6	13.6	1.000020
67000.0	54.0	-60.9		88.6	567.6	94.0	15.0	1.000020
67500.0	52.7	-60.6		86.3	568.0	91.7	16.0	1.000019
68000.0	51.4	-60.3		84.1	568.4	89.4	16.1	1.000019
68500.0	50.2	-59.9		81.9	568.9	87.2	16.2	1.000018
69000.0	49.0	-59.3		79.8	569.7	86.3	17.8	1.000018
69500.0	47.8	-58.7		77.7	570.5	85.9	19.5	1.000017
70000.0	46.7	-58.1		75.6	571.4	86.5	20.9	1.000017
70500.0	45.6	-57.5		73.6	572.2	89.6	21.6	1.000016
71000.0	44.5	-56.8		71.7	573.0	92.5	22.3	1.000016
71500.0	43.5	-56.2		69.8	573.8	93.3	21.5	1.000016
72000.0	42.4	-55.6		68.0	574.6	93.2	20.0	1.000015
72500.0	41.4	-55.0		66.2	575.4	93.0	18.4	1.000015
73000.0	40.5	-54.4		64.4	576.2	90.4	17.5	1.000014
73500.0	39.5	-53.9		62.8	576.8	86.8	16.8	1.000014
74000.0	38.6	-53.7		61.3	577.1	82.9	16.2	1.000014
74500.0	37.7	-53.7		59.8	577.4	82.7	16.5	1.000013
75000.0	36.8	-53.3		58.3	577.7	82.4	17.0	1.000013
75500.0	36.0	-53.0		56.9	578.0	84.1	17.6	1.000013
76000.0	35.1	-52.8		55.6	578.3	84.8	18.1	1.000012
76500.0	34.3	-52.6		54.2	578.6	85.5	18.7	1.000012
77000.0	33.5	-52.4		52.9	578.9	86.1	19.3	1.000012
77500.0	32.8	-52.1		51.6	579.2	80.8	19.9	1.000011
78000.0	32.0	-51.9		50.4	579.5	74.7	20.8	1.000011
78500.0	31.3	-51.7		49.2	579.7	69.4	21.9	1.000011
79000.0	30.5	-51.5		48.0	580.0	69.1	23.4	1.000011
79500.0	29.8	-51.4		46.9	580.1	68.9	24.8	1.000010
80000.0	29.1	-51.9		45.9	579.5	70.3	25.7	1.000010
80500.0	28.5	-52.3		44.9	578.9	77.1	25.3	1.000010
81000.0	27.8	-52.8		44.0	578.3	84.2	25.2	1.000010
81500.0	27.2	-53.0		43.0	578.1	88.9	25.4	1.000010
82000.0	26.5	-52.6		41.9	578.5	90.8	25.5	1.000009
82500.0	25.9	-52.3		40.9	578.9	92.7	25.6	1.000009
83000.0	25.3	-52.0		39.9	579.4	92.0	26.2	1.000009
83500.0	24.8	-51.6		38.9	579.8	89.9	27.0	1.000009

STATION ALTITUDE 4010.40 FEET MSL  
17 JUNE 81 07.00 HRS MDT  
ASCENSION NO. 48

UPPER AIR DATA  
1680220048  
NW 30

TABLE 9 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT DEGREES	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
84000.0	24.2	-51.3			38.0	580.3	87.8	1.000006
84500.0	23.6	-51.0			37.1	580.7		1.000006
85000.0	23.1	-50.6			36.2	581.2		1.000008
85500.0	22.6	-50.3			35.3	581.6		1.000008
86000.0	22.0	-49.9			34.4	582.0		1.000008
86500.0	21.5	-49.6			33.6	582.5		1.000007
87000.0	21.0	-49.3			32.7	582.9		1.000007

STATION ALTITUDE 4010.40 FEET :SL  
 17 JUNE 81 07 00 HRS MD<sub>1</sub>  
 ASCENSION NO. 48

MANDATORY LEVELS  
 1680220048  
 NW 30

TABLE 10

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE DEGREES	AIR DEWPONT CENTIGRADE	REL.HUM. PERCENT	WIND DATA	
					DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	5127.	14.5	2.1	43.	171.8	6.7
800.0	6805.	13.7	*5	40.	190.4	6.5
750.0	8579.	10.2	-1.7	43.	196.3	*4
700.0	10452.	8.3	-4.2	41.	33.7	6.5
650.0	12462.	7.2	-7.0	36.	35.1	11.0
600.0	14611.	3.9	-10.8	33.	353.0	2.4
550.0	16908.	-1.6	-15.7	33.	332.6	7.3
500.0	19385.	-5.6	-19.3	33.	262.9	8.1
450.0	22071.	-10.7	-23.7	33.	341.1	8.9
400.0	24998.	-18.7	-30.3	35.	331.6	3.8
350.0	28214.	-26.7	-37.4	35.	326.1	6.0
300.0	31793.	-36.6	-46.7	34.	325.9	5.5
250.0	35841.	-47.0			8.4	3.1
200.0	40595.	-54.7			253.0	30.4
175.0	43376.	-58.2			256.3	34.8
150.0	46530.	-62.7			266.7	33.7
125.0	50174.	-67.1			291.0	26.9
100.0	54552.	-70.4			319.9	10.5
80.0	58880.	-69.9			141.4	5.7
70.0	61503.	-67.6			132.7	6.5
60.0	64595.	-62.3			131.6	5.7
50.0	68311.	-59.8			87.0	16.2
40.0	72947.	-54.1			89.0	17.2
30.0	79042.	-51.3			68.9	24.3
25.0	82911.	-51.8			91.0	26.5

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3912.75 FEET MSL  
 17 JUNE 81 0800 HRS MDT  
 ASCENSION NO. 104

SIGNIFICANT LEVEL DATA  
 1680290104  
 E-28

GEODETIC COORDINATES  
 32.89927 LAT DEG  
 106.40591 LON DEG

TABLE 11

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	DEWPONT CENTIGRADE	REL.HUM. PERCENT
894.5	3912.7	15.0	3.5	46.0
880.8	4342.3	15.7	1.1	37.0
865.0	4846.0	14.9	.7	38.0
850.0	5332.1	15.0	.4	37.0
806.4	6795.2	14.9	-3.0	29.0
721.6	9844.7	8.0	-5.1	39.0
700.0	10670.1	9.0	-6.4	33.0
685.0	11260.3	9.7	-7.4	29.0
622.2	13862.7	5.5	-16.3	19.0
596.4	14996.8	3.9	-17.0	20.0
559.0	16711.6	-.7	-20.3	21.0
537.4	17746.0	-.9	-21.6	19.0
502.5	19495.4	-4.8	-23.7	21.0
473.4	21030.9	-7.4	-26.4	20.0
400.0	25254.3	-18.8	-35.1	22.0
300.0	32050.5	-37.5	-50.1	25.0
278.8	33701.0	-41.8		
250.0	36104.9	-47.4		
244.2	36614.6	-48.7		
227.8	38111.5	-51.3		
215.8	39270.8	-51.0		
200.0	40890.0	-54.0		
172.4	44003.7	-57.9		
150.0	46866.3	-62.4		
123.6	50777.3	-65.6		
100.0	54981.7	-70.0		
95.4	55904.1	-71.0		
87.6	57580.8	-68.6		
80.6	59235.5	-66.7		
76.2	60350.7	-68.7		
70.0	62046.3	-64.4		
58.2	65807.2	-60.7		
50.0	68953.4	-57.4		
39.6	73882.4	-52.2		
37.2	75219.4	-52.4		
30.0	79839.7	-50.4		
20.8	87847.6	-44.7		

STATION ALTITUDE 3912.75 FEET MSL  
 17 JUNE 81 0800 HRS WJT  
 ASCENSION NO. 104

UPPER AIR DATA  
 1680290104  
 E-28

GEODETIC COORDINATES  
 32.89927 LAT DEG  
 106.40591 LON DEG

TABLE 12

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES (TN)	SPEED KNOTS	
5912.7	894.9	15.0	3.5	46.0	1077.8	662.4	•0	1.0000276
4000.0	891.7	15.1	3.0	44.2	1074.0	662.5	•5	1.0000274
4500.0	875.8	15.4	1.0	37.3	1054.2	662.8	3.4	1.0000265
5000.0	860.2	14.9	•6	37.7	1037.3	662.2	6.2	1.0000260
5500.0	844.9	15.0	.1	36.1	1018.7	662.2	9.1	1.0000255
6000.0	829.8	15.0	-1.0	33.3	1000.8	662.1	178.7	1.0000249
6500.0	815.0	14.9	-2.2	30.6	983.2	662.0	188.8	1.0000243
7000.0	800.4	14.4	-3.0	29.7	967.3	661.4	197.5	8.4
7500.0	785.0	13.3	-3.3	31.3	953.6	660.1	205.5	7.6
8000.0	771.8	12.2	-3.6	33.0	940.1	658.8	206.5	1.0000231
8500.0	757.8	11.0	-4.0	34.6	926.8	657.5	200.9	7.5
9000.0	744.2	9.9	-4.4	36.2	913.8	656.2	191.2	7.6
9500.0	730.7	8.8	-4.6	37.9	900.9	654.9	178.6	8.0
10000.0	717.5	8.2	-5.3	37.9	886.5	654.2	118.6	4.9
10500.0	704.4	8.8	-6.1	34.2	868.5	654.8	40.1	1.0000217
11000.0	691.6	9.4	-7.0	30.8	851.0	655.5	36.1	1.0000212
11500.0	679.0	9.3	-8.2	28.1	835.8	655.4	40.3	1.0000202
12000.0	666.5	8.5	-9.8	26.2	823.0	654.4	44.8	1.0000197
12500.0	654.3	7.7	-11.4	24.2	810.4	653.4	50.2	11.7
13000.0	642.4	6.9	-13.1	22.3	798.0	652.4	4.4	1.0000193
13500.0	630.6	6.1	-14.9	20.4	785.8	651.4	36.0	1.0000188
14000.0	619.0	5.3	-16.3	19.1	773.6	650.4	35.5	4.4
14500.0	607.6	4.6	-16.6	19.6	761.2	649.6	345.0	4.9
15000.0	596.3	3.9	-17.0	20.0	749.1	648.8	332.1	6.0
15500.0	585.2	2.6	-17.9	20.3	738.7	647.2	327.3	7.0
16000.0	574.2	1.2	-18.9	20.6	728.5	645.6	326.0	5.6
16500.0	563.5	-1.1	-19.8	20.9	718.4	644.0	330.0	4.5
17000.0	552.9	-8	-20.6	20.4	706.5	643.5	322.8	8.8
17500.0	542.5	-9	-21.2	19.5	693.5	643.1	308.5	9.4
18000.0	532.2	-1.5	-21.9	19.3	681.9	642.4	290.0	9.4
18500.0	522.1	-2.6	-22.5	19.9	671.7	641.0	273.0	9.8
19000.0	512.1	-3.7	-23.1	20.4	661.7	639.7	260.4	8.5
19500.0	502.4	-4.8	-23.7	21.0	651.8	638.4	253.8	7.1
20000.0	492.7	-5.7	-24.6	20.7	641.3	637.4	264.8	5.3
20500.0	483.3	-6.5	-25.5	20.3	631.0	636.3	301.9	4.6
21000.0	474.0	-7.3	-26.4	20.0	620.8	635.3	335.3	4.5
21500.0	464.6	-8.7	-27.4	20.2	611.7	633.7	340.0	8.0
22000.0	455.4	-10.0	-28.4	20.5	602.7	632.1	341.9	8.9
22500.0	446.5	-11.4	-29.4	20.7	593.8	630.5	339.8	8.1
23000.0	437.6	-12.7	-30.4	20.9	585.2	628.8	338.9	7.0

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32.89927 LAT DEG  
106.40591 LON DEG

TABLE 12 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR DEGREES	TEMPERATURE DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
23500.0	429.0	-14.1	-31.5	21.2	576.6	627.2	340.5	5.4	1.000131
24000.0	420.5	-15.4	-32.5	21.4	568.2	625.5	339.6	4.2	1.000129
24500.0	412.2	-16.8	-33.5	21.6	559.9	623.9	333.7	3.5	1.000127
25000.0	404.1	-18.1	-34.6	21.9	551.8	622.2	325.8	3.1	1.000125
25500.0	395.9	-19.5	-35.7	22.1	543.5	620.6	318.7	3.3	1.000123
26000.0	387.6	-20.9	-36.7	22.3	535.0	618.9	315.9	3.5	1.000121
26500.0	379.5	-22.2	-37.8	22.5	526.7	617.2	316.2	3.6	1.000119
27000.0	371.5	-23.6	-38.9	22.8	518.5	615.5	327.7	3.8	1.000117
27500.0	363.7	-25.0	-40.0	23.0	510.5	613.8	358.7	4.2	1.000115
28000.0	356.1	-26.4	-41.1	23.2	502.6	612.1	343.0	5.2	1.000113
28500.0	348.7	-27.7	-42.2	23.4	494.8	610.4	341.5	5.8	1.000111
29000.0	341.4	-29.1	-43.3	23.7	487.2	608.6	331.4	6.0	1.000109
29500.0	334.2	-30.5	-44.4	23.9	479.7	606.9	323.2	6.2	1.000108
30000.0	327.2	-31.9	-45.5	24.1	472.3	605.2	316.7	6.4	1.000106
30500.0	320.3	-33.2	-46.7	24.3	465.1	603.5	314.9	6.4	1.000104
31000.0	313.6	-34.6	-47.8	24.5	458.0	601.7	315.4	6.2	1.000103
31500.0	307.1	-36.0	-48.9	24.8	451.0	600.0	316.9	6.1	1.000101
32000.0	300.6	-37.4	-50.0	25.0	444.1	598.2	318.8	6.0	1.000099
32500.0	294.1	-38.7	-53.8	18.2**	436.9	596.6	317.5	5.6	1.000098
33000.0	287.6	-40.0	-59.2	10.6**	429.7	594.9	311.8	5.3	1.000096
33500.0	281.3	-41.3	-69.3	3.0**	422.6	593.2	311.4	4.6	1.000094
34000.0	275.0	-42.5			415.4	591.7	310.3	4.1	1.000093
34500.0	268.9	-43.7			408.2	590.2	307.4	4.3	1.000091
35000.0	262.8	-44.8			401.0	588.7	308.0	4.2	1.000089
35500.0	257.0	-46.0			394.1	587.2	316.1	3.8	1.000088
36000.0	251.2	-47.2			387.2	585.7	311.5	3.5	1.000086
36500.0	245.5	-48.4			380.5	584.0	287.9	3.7	1.000085
37000.0	239.9	-49.4			373.4	582.8	272.0	6.3	1.000083
37500.0	234.4	-50.2			366.3	581.7	267.6	10.9	1.000082
38000.0	229.0	-51.1			359.3	580.5	263.7	15.1	1.000080
38500.0	223.7	-51.2			351.1	580.4	259.7	19.2	1.000078
39000.0	218.5	-51.1			342.8	580.6	257.2	22.9	1.000076
39500.0	213.5	-51.4			335.4	580.1	255.6	25.8	1.000075
40000.0	208.5	-52.4			329.0	578.9	254.8	28.4	1.000073
40500.0	203.7	-53.3			322.7	577.7	256.4	30.2	1.000072
41000.0	199.0	-54.1			316.5	576.5	257.5	31.9	1.000070
41500.0	194.3	-54.8			309.9	575.7	256.4	33.0	1.000069
42000.0	189.7	-55.4			303.5	574.9	255.5	34.0	1.000068
42500.0	185.2	-56.0			297.2	574.1	255.3	34.9	1.000066
43000.0	180.9	-56.6			291.0	573.2	255.1	35.8	1.000065

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

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GEODETIC COORDINATES  
32.89927 LAT DEG  
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GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT DEGREES	REL.HUM. PERCENT	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TIN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
43500.0	176.6	-57.3			285.0	572.4	257.2	1.000063
44000.0	172.4	-57.9			279.1	571.6	259.4	1.000062
44500.0	168.3	-58.7			273.4	570.5	261.8	1.000061
45000.0	164.2	-59.5			267.8	569.5	264.4	1.000060
45500.0	160.3	-60.3			262.3	568.4	266.5	1.000058
46000.0	156.5	-61.0			257.0	567.4	268.3	1.000057
46500.0	152.7	-61.8			251.7	566.3	270.7	1.000056
47000.0	149.0	-62.5			246.4	565.4	273.7	1.000055
47500.0	145.4	-62.9			240.9	564.9	277.2	1.000054
48000.0	141.8	-63.3			235.5	564.3	281.2	1.000052
48500.0	138.3	-63.7			230.1	563.8	285.3	1.000051
49000.0	135.0	-64.1			225.0	563.2	287.8	1.000050
49500.0	131.7	-64.6			219.9	562.7	290.6	1.000049
50000.0	128.4	-65.0			214.9	562.1	291.6	1.000048
50500.0	125.3	-65.4			210.1	561.6	292.3	1.000047
51000.0	122.2	-65.8			205.4	560.9	292.8	1.000046
51500.0	119.2	-66.4			200.8	560.2	292.6	1.000045
52000.0	116.2	-66.9			196.3	559.5	292.9	1.000044
52500.0	113.3	-67.4			191.9	558.8	296.0	1.000043
53000.0	110.5	-67.9			187.6	558.1	299.6	1.000042
53500.0	107.8	-68.4			183.4	557.4	307.1	1.000041
54000.0	105.1	-69.0			179.3	556.7	316.6	1.000040
54500.0	102.5	-69.5			175.3	556.0	325.6	1.000039
55000.0	99.9	-70.0			171.3	555.2	335.1	1.000038
55500.0	97.4	-70.6			167.5	554.5	345.9	1.000037
56000.0	94.9	-70.9			163.5	554.1	354.4	1.000036
56500.0	92.6	-70.1			158.8	555.1	9.4	1.000035
57000.0	90.2	-69.4			154.3	556.0	34.0	1.000034
57500.0	88.0	-68.7			149.9	557.0	86.8	1.000033
58000.0	85.8	-68.1			145.7	557.8	124.5	1.000032
58500.0	83.6	-67.5			141.7	558.6	143.5	4.7
59000.0	81.6	-67.0			137.8	559.4	153.7	6.3
59500.0	79.5	-67.2			134.5	559.1	155.8	7.2
60000.0	77.6	-68.1			131.7	557.9	153.3	7.2
60500.0	75.6	-68.3			128.6	557.6	150.8	7.2
61000.0	73.8	-67.1			124.7	559.3	141.6	7.3
61500.0	71.9	-65.8			120.9	561.0	131.4	7.7
62000.0	70.2	-64.5			117.2	562.7	125.0	8.0
62500.0	68.5	-64.0			114.0	563.5	124.5	7.6
63000.0	66.8	-63.5			111.0	564.1	124.0	7.3

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TABLE 12 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	DEWPOINT PERCENT	REL.HUM. GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
63500.0	65.2	-63.0		108.0	564.8	122.3	7.0	1.000024
64000.0	63.6	-62.5		105.2	565.5	120.1	6.8	1.000023
64500.0	62.1	-62.0		102.4	566.1	116.1	7.1	1.000023
65000.0	60.6	-61.5		99.7	566.8	109.0	9.3	1.000022
65500.0	59.1	-61.0		97.0	567.4	104.8	11.6	1.000022
66000.0	57.7	-60.5		94.5	568.1	103.5	12.5	1.000021
66500.0	56.3	-60.0		92.0	568.8	103.1	12.6	1.000020
67000.0	54.9	-59.4		89.6	569.5	102.6	12.8	1.000020
67500.0	53.6	-58.9		87.2	570.2	98.2	14.5	1.000019
68000.0	52.4	-58.4		84.9	570.9	94.7	16.3	1.000019
68500.0	51.1	-57.9		82.7	571.6	93.2	18.4	1.000018
69000.0	49.9	-57.4		80.5	572.3	93.3	20.8	1.000018
69500.0	48.7	-56.8		78.5	573.0	93.5	23.2	1.000017
70000.0	47.6	-56.3		76.4	573.7	93.3	23.1	1.000017
70500.0	46.5	-55.8		74.5	574.4	93.0	21.7	1.000017
71000.0	45.4	-55.2		72.6	575.1	92.6	20.3	1.000016
71500.0	44.3	-54.7		70.7	575.8	89.2	20.4	1.000016
72000.0	43.3	-54.2		68.9	576.5	85.4	20.7	1.000015
72500.0	42.3	-53.7		67.1	577.2	81.8	21.0	1.000015
73000.0	41.3	-53.1		65.4	577.9	80.1	20.5	1.000015
73500.0	40.3	-52.6		63.7	578.6	78.2	20.0	1.000014
74000.0	39.4	-52.2		62.1	579.1	76.9	19.4	1.000014
74500.0	38.5	-52.3		60.7	579.0	77.2	18.7	1.000014
75000.0	37.6	-52.4		59.3	578.9	77.7	18.0	1.000013
75500.0	36.7	-52.3		57.9	579.0	76.8	18.0	1.000013
76000.0	35.9	-52.1		56.5	579.3	81.3	19.5	1.000013
76500.0	35.0	-51.8		55.2	579.5	83.4	20.9	1.000012
77000.0	34.2	-51.6		53.8	579.8	84.5	21.7	1.000012
77500.0	33.5	-51.4		52.6	580.1	84.3	21.4	1.000012
78000.0	32.7	-51.2		51.3	580.4	84.2	21.1	1.000011
78500.0	31.9	-51.0		50.1	580.7	86.5	22.9	1.000011
79000.0	31.2	-50.8		48.9	581.0	90.4	27.2	1.000011
79500.0	30.5	-50.5		47.7	581.2	93.3	31.6	1.000011
80000.0	29.8	-50.3		46.6	581.6	94.3	33.0	1.000010
80500.0	29.1	-49.9		45.4	582.1	94.2	32.0	1.000010
81000.0	28.4	-49.6		44.3	582.5	94.2	30.9	1.000010
81500.0	27.8	-49.2		43.3	583.0	91.3	27.1	1.000010
82000.0	27.2	-48.9		42.2	583.4	84.5	21.5	1.000009
82500.0	26.6	-48.5		41.2	583.9	73.1	16.4	1.000009
83000.0	26.0	-48.0		40.2	584.4	73.1	18.1	1.000009

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TABLE 12 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE DEGREES	AIR DEWPOINT DEGREES	REL.HUM. PERCENT	SPEED OF SOUND METER KNOTS	DIRECTION DEGREES(TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
83500.0	25.4	-47.8			39.2	584.8	76.3	21.6
84000.0	24.8	-47.4			38.3	585.3	78.7	25.1
84500.0	24.2	-47.1			37.4	585.8	85.7	1.000009
85000.0	23.7	-46.7			36.5	586.2	91.1	1.000008
85500.0	23.2	-46.4			35.6	586.7	32.5	1.000008
86000.0	22.6	-46.0			34.7	587.1		1.000008
86500.0	22.1	-45.7			33.9	587.6		1.000008
87000.0	21.6	-45.3			33.1	588.1		1.000007
87500.0	21.1	-44.9			32.3	588.5		1.000007

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GEODETIC COORDINATES  
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TABLE 13

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE DEGREES	REL.HUM. PERCENT	WIND DATA	
				AIR DEGREE	DIRECTION DEGREES (TN) SPEED KNOTS
850.0	5328.	15.0	•4	37.	173°0 8.1
800.0	7011.	14.4	-3.1	30.	197.7 8.3
750.0	8786.	10.4	-4.2	36.	195.2 7.8
700.0	10660.	9.0	-6.4	33.	35.0 7.9
650.0	12671.	7.4	-12.0	24.	49.1 10.5
600.0	14819.	4.1	-16.9	20.	335.9 5.6
550.0	17116.	-8	-20.8	20.	319.0 9.1
500.0	19597.	-5.0	-23.9	21.	255.8 6.7
450.0	22287.	-10.6	-29.0	21.	340.6 8.4
400.0	25212.	-18.8	-35.1	22.	322.2 3.2
350.0	28421.	-27.5	-42.0	23.	342.4 5.8
300.0	31987.	-37.5	-50.1	25.	318.8 6.0
250.0	36026.	-47.4			307.2 3.5
200.0	40791.	-54.0			257.4 31.6
175.0	43581.	-57.5			258.0 35.5
150.0	46740.	-62.4			272.7 32.7
125.0	50406.	-65.4			292.4 22.0
100.0	54812.	-70.0			334.6 8.9
80.0	59189.	-67.0			156.6 7.2
70.0	61834.	-64.4			125.0 8.0
60.0	64949.	-61.3			107.5 10.0
50.0	68695.	-57.4			93.3 20.4
40.0	73375.	-52.4			77.7 19.8
30.0	79499.	-50.4			94.3 33.4
25.0	83426.	-47.6			77.6 23.4

STATION ALTITUDE 3912.75 FEET MSL  
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SIGNIFICANT LEVEL DATA  
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 32.89927 LAT DEG  
 106.40591 LON DEG

TABLE 14

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE DEGREES CENTIGRADE	REL.HUM. PERCENT
893.8	3912.7	19.6	30.0
880.2	4344.2	17.6	32.0
860.4	4981.3	16.8	31.0
850.0	5321.8	17.8	19.0
802.0	6945.8	15.6	26.0
744.4	9005.2	11.2	34.0
700.0	10688.9	10.4	23.0
625.2	13751.6	5.7	17.0
616.0	14150.0	5.9	17.0
564.4	16477.3	-1.1	18.0
531.2	18070.2	-7.9	17.0
500.0	19647.6	-4.6	18.0
452.2	22223.9	-9.7	19.0
400.0	25289.3	-18.1	21.0
372.2	27046.0	-22.3	21.0
300.0	32116.8	-36.3	22.0
250.0	36196.1	-46.1	
230.8	37932.4	-49.8	
220.2	38946.0	-49.7	
200.0	41006.1	-52.9	
172.4	44130.6	-57.5	
150.0	47001.3	-61.6	
132.0	49600.4	-63.7	
128.2	50192.7	-62.8	
100.0	55163.0	-69.4	
86.4	58043.5	-69.2	
81.8	59117.6	-71.0	
70.0	62211.1	-64.6	
65.6	63521.6	-64.3	
50.0	69114.1	-56.3	
40.6	73539.1	-51.0	
30.0	80044.8	-51.3	
25.0	84007.5	-46.4	
20.0	88955.9	-42.4	
17.8	91572.7	-40.8	

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TABLE 15

GEOGRAPHIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3912.7	893.8	19.6	1.6	30.0	1060.5	667.5	.0	1.000267
4000.0	891.0	19.2	1.4	30.4	1058.7	667.1	194.1	.3
4500.0	875.3	17.4	.5	31.8	1046.6	665.0	194.1	1.000266
5000.0	859.8	16.9	-.6	30.3	1030.2	664.3	194.1	1.000262
5500.0	844.6	17.6	-5.8	19.8	1010.3	664.8	194.1	1.000256
6000.0	829.6	16.9	-5.0	21.9	994.6	664.1	198.6	1.000243
6500.0	814.9	16.2	-4.3	24.1	979.1	663.4	213.0	1.000241
7000.0	800.4	15.5	-3.8	26.2	964.0	662.6	216.7	1.000238
7500.0	786.1	14.4	-3.8	28.2	950.2	661.4	204.7	1.000236
8000.0	772.0	13.8	-3.8	30.1	936.6	660.2	193.7	1.000233
8500.0	758.1	12.3	-3.9	32.0	923.2	658.9	178.5	1.000230
9000.0	744.5	11.2	-4.1	34.0	910.0	657.7	151.7	1.000227
9500.0	731.1	11.0	-5.6	30.8	894.5	657.3	108.8	1.000224
10000.0	717.8	10.7	-7.2	27.5	879.3	657.0	84.2	1.000218
10500.0	704.8	10.5	-9.1	24.2	864.3	656.7	71.0	1.000213
11000.0	692.0	9.9	-10.5	22.4	850.4	655.9	60.4	1.000207
11500.0	679.4	9.2	-11.8	21.4	837.2	655.0	47.5	1.000202
12000.0	666.9	8.4	-13.0	20.4	824.2	654.1	36.6	1.000198
12500.0	654.7	7.6	-14.2	19.5	811.4	653.2	24.9	1.000194
13000.0	642.8	6.9	-15.5	18.5	798.9	652.2	12.5	1.000187
13500.0	631.0	6.1	-16.7	17.5	786.5	651.3	35.6	1.000183
14000.0	619.4	5.8	-17.3	17.0	772.8	651.0	345.7	1.000180
14500.0	607.9	5.0	-17.9	17.2	760.7	650.0	334.9	1.000177
15000.0	596.6	3.7	-18.8	17.4	750.1	648.5	325.5	1.000174
15500.0	585.5	2.4	-19.7	17.6	739.6	647.0	322.8	1.000171
16000.0	574.6	1.1	-20.6	17.8	729.3	645.4	320.2	1.000168
16500.0	563.9	-.1	-21.5	18.0	719.0	644.0	318.3	1.000166
17000.0	553.3	-.4	-21.9	17.7	706.1	643.7	314.2	1.000163
17500.0	542.9	-.6	-22.4	17.4	693.4	643.4	294.8	1.000160
18000.0	532.6	-.9	-22.8	17.0	681.0	643.1	280.2	1.000157
18500.0	522.5	-1.9	-23.5	17.3	670.6	641.8	268.4	1.000154
19000.0	512.6	-3.1	-24.2	17.6	660.8	640.4	259.5	1.000152
19500.0	502.8	-4.3	-25.0	17.9	651.1	639.0	256.2	1.000149
20000.0	493.2	-5.3	-25.7	18.1	641.1	637.8	255.0	1.000147
20500.0	483.7	-6.3	-26.5	18.3	631.0	636.6	262.4	1.000144
21000.0	474.3	-7.3	-27.2	18.5	621.2	635.4	281.8	1.000142
21500.0	465.1	-8.3	-27.9	18.7	611.4	634.2	300.2	1.000140
22000.0	456.2	-9.3	-28.6	18.9	601.9	633.0	312.8	1.000137
22500.0	447.2	-10.5	-29.5	19.2	592.8	631.6	320.8	1.000135
23000.0	438.4	-11.6	-30.4	19.5	584.1	629.9	321.6	1.000133

GEODETIC COORDINATES  
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TABLE 15 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT DEGREES	CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
23500.0	429.7	-13.2	-31.4	19.8	575.6	628.2	321.2	6.7	1.000131	
24000.0	421.2	-14.6	-32.4	20.2	567.2	626.6	313.1	5.6	1.000129	
24500.0	412.8	-15.9	-33.4	20.5	559.0	624.9	301.5	4.7	1.000127	
25000.0	404.7	-17.3	-34.4	20.8	550.8	623.2	281.5	4.1	1.000125	
25500.0	396.6	-18.6	-35.4	21.0	542.6	621.6	258.6	4.1	1.000123	
26000.0	388.5	-19.8	-36.4	21.0	534.1	620.2	256.1	4.1	1.000121	
26500.0	380.6	-21.0	-37.5	21.0	525.7	618.7	258.7	4.0	1.000119	
27000.0	372.9	-22.2	-38.5	21.0	517.5	617.2	272.3	3.7	1.000117	
27500.0	365.1	-23.6	-39.6	21.1	509.4	615.5	296.1	3.9	1.000115	
28000.0	357.4	-24.9	-40.7	21.2	501.5	613.8	310.9	4.8	1.000113	
28500.0	349.9	-26.3	-41.9	21.3	493.7	612.1	313.4	6.2	1.000111	
29000.0	342.5	-27.7	-43.0	21.4	486.1	610.4	314.5	7.4	1.000109	
29500.0	335.3	-29.1	-44.2	21.5	478.5	608.7	312.7	7.5	1.000107	
30000.0	328.3	-30.5	-45.3	21.6	471.1	606.9	311.0	7.6	1.000106	
30500.0	321.4	-31.8	-46.5	21.7	463.9	605.2	312.5	7.1	1.000104	
31000.0	314.6	-33.2	-47.6	21.8	456.7	603.5	314.3	6.6	1.000102	
31500.0	308.0	-34.6	-48.8	21.9	449.7	601.7	315.2	6.6	1.000101	
32000.0	301.5	-36.0	-49.9	22.0	442.8	600.0	315.8	6.7	1.000099	
32500.0	294.9	-37.2	-51.8	19.9**	435.4	598.4	316.0	6.9	1.000097	
33000.0	288.4	-38.4	-54.1	17.2**	428.0	596.9	315.9	7.1	1.000096	
33500.0	282.0	-39.6	-56.4	14.5**	420.7	595.3	316.1	7.0	1.000094	
34000.0	275.8	-40.8	-59.1	11.8**	413.5	593.8	316.9	6.4	1.000092	
34500.0	269.7	-42.0	-62.0	9.1**	406.5	592.3	317.9	5.8	1.000091	
35000.0	263.7	-43.2	-65.5	6.5**	399.6	590.7	319.8	5.3	1.000089	
35500.0	257.9	-44.4	-70.2	3.8**	392.8	589.2	322.1	4.8	1.000088	
36000.0	252.2	-45.6	-79.3	1.1**	386.2	587.6	315.2	5.2	1.000086	
36500.0	246.5	-46.7			379.3	586.2	308.0	6.0	1.000084	
37000.0	240.9	-47.8			372.5	584.8	295.0	7.7	1.000083	
37500.0	235.4	-48.9			365.7	583.4	282.6	10.7	1.000081	
38000.0	230.1	-49.8			358.8	582.2	275.4	14.0	1.000080	
38500.0	224.8	-49.7			350.5	582.3	268.1	18.5	1.000078	
39000.0	219.6	-49.8			342.6	582.2	263.8	23.1	1.000076	
39500.0	214.6	-50.6			335.8	581.2	260.6	26.5	1.000075	
40000.0	209.6	-51.3			329.2	580.2	258.0	28.9	1.000073	
40500.0	204.8	-52.1			322.7	579.2	255.9	31.4	1.000072	
41000.0	200.1	-52.9			316.4	578.2	256.4	32.3	1.000070	
41500.0	195.4	-53.6			310.0	577.2	256.8	33.2	1.000069	
42000.0	190.8	-54.4			303.8	576.2	256.6	34.6	1.000068	
42500.0	186.3	-55.1			297.6	575.3	256.0	36.4	1.000066	
43000.0	181.9	-55.8			291.6	574.3	255.5	38.1	1.000065	

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

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TABLE 15 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT DEGREES	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	INDEX OF REFRACTION
43500.0	177.6	-56.6			285.7	573.3	254.6	1.000064
44000.0	173.5	-57.3			280.0	572.4	253.6	1.000062
44500.0	169.3	-58.0			274.2	571.4	254.2	1.000061
45000.0	165.3	-58.7			268.5	570.4	256.1	1.000060
45500.0	161.3	-59.5			263.0	569.5	258.3	1.000059
46000.0	157.5	-60.2			257.6	568.5	260.4	1.000057
46500.0	153.7	-60.9			252.2	567.6	262.5	1.000056
47000.0	150.0	-61.6			247.0	566.6	264.6	1.000055
47500.0	146.4	-62.0			241.5	566.1	266.0	1.000054
48000.0	142.8	-62.4			236.1	565.6	267.6	1.000053
48500.0	139.3	-62.8			230.8	565.0	269.9	1.000051
49000.0	136.0	-63.2			225.6	564.5	272.9	1.000050
49500.0	132.7	-63.6			220.5	563.9	276.4	1.000049
50000.0	129.4	-63.1			214.6	564.6	277.0	1.000048
50500.0	126.2	-63.2			209.5	564.5	277.7	1.000047
51000.0	123.1	-63.9			205.0	563.6	279.9	1.000046
51500.0	120.1	-64.5			200.5	562.7	284.0	1.000045
52000.0	117.1	-65.2			196.2	561.8	288.9	1.000044
52500.0	114.2	-65.9			192.0	560.9	297.2	1.000043
53000.0	111.4	-66.5			187.8	560.0	307.4	1.000042
53500.0	108.7	-67.2			183.8	559.1	317.3	1.000041
54000.0	106.0	-67.9			179.8	558.2	322.8	1.000040
54500.0	103.4	-68.5			176.0	557.3	329.4	1.000039
55000.0	100.8	-69.2			172.2	556.4	337.4	1.000038
55500.0	98.3	-69.4			168.1	556.1	346.8	1.000037
56000.0	95.8	-69.3			163.8	556.2	357.7	1.000036
56500.0	93.4	-69.3			159.7	556.2	6.9	1.000035
57000.0	91.1	-69.3			155.7	556.3	17.4	1.000034
57500.0	88.8	-69.2			151.7	556.3	33.9	1.000033
58000.0	86.6	-69.2			147.9	556.4	81.0	1.000032
58500.0	84.4	-70.0			144.7	555.3	163.9	1.000031
59000.0	82.3	-70.8			141.7	554.2	178.2	1.000030
59500.0	80.2	-70.2			137.7	555.0	177.6	1.000029
60000.0	78.2	-69.2			133.6	556.4	177.1	1.000028
60500.0	76.3	-68.1			129.7	557.6	175.3	1.000027
61000.0	74.4	-67.1			125.8	559.2	170.0	1.000026
61500.0	72.6	-66.1			122.1	560.6	162.6	1.000025
62000.0	70.7	-65.0			118.4	562.0	157.6	1.000024
62500.0	69.0	-64.5			115.2	562.7	155.2	1.000023
63000.0	67.3	-64.4			112.3	562.8	152.3	1.000025

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TABLE 15 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
63500.0	65.7	-64.3			109.5	563.0	133.6	5.3	1.000024
64000.0	64.1	-63.6			106.6	563.9	118.8	6.8	1.000024
64500.0	62.6	-62.9			103.7	564.9	109.8	8.6	1.000023
65000.0	61.1	-62.2			100.8	565.8	108.0	9.6	1.000022
65500.0	59.6	-61.5			98.1	566.8	106.5	10.7	1.000022
66000.0	58.2	-60.8			95.4	567.8	105.3	11.5	1.000021
66500.0	56.8	-60.0			92.8	568.7	104.0	11.3	1.000021
67000.0	55.4	-59.3			90.3	569.7	102.7	11.1	1.000020
67500.0	54.1	-58.6			87.8	570.6	101.2	11.8	1.000020
68000.0	52.8	-57.9			85.4	571.6	99.9	14.2	1.000019
68500.0	51.5	-57.2			83.1	572.5	99.9	16.6	1.000019
69000.0	50.3	-56.5			80.8	573.5	99.9	18.1	1.000018
69500.0	49.1	-55.8			78.7	574.3	101.5	19.3	1.000018
70000.0	48.0	-55.2			76.7	575.1	102.9	20.4	1.000017
70500.0	46.8	-54.6			74.7	575.9	102.4	20.1	1.000017
71000.0	45.8	-54.0			72.7	576.7	102.0	19.7	1.000016
71500.0	44.7	-53.4			70.9	577.5	100.8	19.4	1.000016
72000.0	43.7	-52.8			69.0	578.2	98.1	19.2	1.000015
72500.0	42.6	-52.2			67.2	579.0	95.4	19.1	1.000015
73000.0	41.6	-51.6			65.5	579.8	91.8	19.5	1.000015
73500.0	40.7	-51.0			63.8	580.6	88.0	20.2	1.000014
74000.0	39.7	-51.0			62.3	580.6	84.4	21.1	1.000014
74500.0	38.8	-51.0			60.9	580.6	82.6	21.9	1.000014
75000.0	37.9	-51.1			59.5	580.6	81.7	22.7	1.000013
75500.0	37.1	-51.1			58.1	580.5	80.8	23.4	1.000013
76000.0	36.2	-51.1			56.8	580.5	80.7	24.0	1.000013
76500.0	35.4	-51.1			55.5	580.5	80.8	24.6	1.000012
77000.0	34.6	-51.2			54.2	580.4	81.0	25.1	1.000012
77500.0	33.8	-51.2			53.0	580.4	80.4	26.4	1.000012
78000.0	33.0	-51.2			51.8	580.4	79.6	28.0	1.000012
78500.0	32.2	-51.2			50.6	580.4	78.9	29.7	1.000011
79000.0	31.5	-51.3			49.4	580.3	81.1	30.8	1.000011
79500.0	30.8	-51.3			48.3	580.3	84.0	31.8	1.000011
80000.0	30.1	-51.3			47.2	580.3	87.0	32.7	1.000011
80500.0	29.4	-50.7			46.0	581.0	91.5	32.8	1.000010
81000.0	28.7	-50.1			44.8	581.8	95.9	33.1	1.000010
81500.0	28.1	-49.5			43.7	582.6	98.7	33.1	1.000010
82000.0	27.4	-48.9			42.6	583.4	100.2	32.6	1.000009
82500.0	26.8	-48.3			41.5	584.2	101.8	32.1	1.000009
83000.0	26.2	-47.6			40.5	585.0	100.7	30.7	1.000009

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GEODETIC COORDINATES  
 32.89927 LAT DEG  
 106.40591 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREESES	DEWPOINT CENTIGRADE	KEL.HUM. PERCENT	SPEED OF SOUND METER	DIRECTION DEGREES (IN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
83500.0	25.6	-47.0		39.4	585.8	99.4	29.3	1.000009
84000.0	25.0	-46.4		38.4	586.6	97.6	28.8	1.000009
84500.0	24.5	-46.0		37.5	587.2	95.1	29.3	1.000008
85000.0	23.9	-45.6		36.6	587.7	92.7	29.8	1.000008
85500.0	23.4	-45.2		35.7	588.2	91.3	29.3	1.000008
86000.0	22.9	-44.8		34.9	588.7	90.0	28.5	1.000008
86500.0	22.3	-44.4		34.0	589.2	89.2	27.4	1.000008
87000.0	21.8	-44.0		33.2	589.8	90.3	24.8	1.000007
87500.0	21.4	-43.6		32.4	590.3	91.7	22.3	1.000007
88000.0	20.9	-43.2		31.6	590.8	93.3	20.1	1.000007
88500.0	20.4	-42.8		30.9	591.3	95.2	18.2	1.000007
89000.0	20.0	-42.4		30.1	591.8	97.5	16.3	1.000007
89500.0	19.5	-42.1		29.4	592.2			1.000007
90000.0	19.1	-41.8		28.7	592.6			1.000006
90500.0	18.7	-41.5		28.1	593.0			1.000006
91000.0	18.3	-41.2		27.4	593.4			1.000006
91500.0	17.9	-40.8		26.8	593.8			1.000006

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MANDATORY LEVELS  
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TABLE 16

GEOGRAPHIC COORDINATES  
32.89927 LAT DEG  
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PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE DEGREES CENTIGRADE	AIR DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5318.	17.8	-6.1	19.	194.1	4.1
800.0	7010.	15.5	-3.8	26.	216.4	4.3
750.0	8792.	11.6	-4.0	33.	167.7	4.1
700.0	10679.	10.4	-9.8	23.	67.6	8.2
650.0	12690.	7.3	-14.7	19.	19.9	9.0
600.0	14838.	4.1	-18.5	17.	327.0	7.0
550.0	17135.	-.4	-22.1	18.	308.1	6.2
500.0	19620.	-4.6	-25.2	18.	255.9	10.3
450.0	22314.	-10.0	-29.2	19.	320.3	8.1
400.0	25247.	-18.1	-35.0	21.	268.7	4.0
350.0	28470.	-26.3	-41.9	21.	313.4	6.2
300.0	32053.	-36.3	-50.2	22.	315.9	6.7
250.0	36117.	-46.1			312.4	5.5
200.0	40907.	-52.9			256.4	32.2
175.0	43707.	-57.0			254.1	38.2
150.0	46874.	-61.6			264.5	32.4
125.0	50560.	-63.5			278.0	19.1
100.0	54992.	-69.4			339.8	9.1
80.0	59357.	-70.1			177.7	7.8
70.0	61998.	-64.6			156.0	5.4
60.0	65102.	-61.7			107.1	10.3
50.0	68854.	-56.3			100.2	18.3
40.0	73565.	-51.0			85.6	20.8
30.0	79702.	-51.3			87.1	32.7
25.0	83632.	-46.4			97.7	28.7
20.0	88537.	-42.4			97.1	16.6

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

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